COCCINEAE

Crataegus Holmesiana var. **tardipes,** n. var. — *Crataegus tardipes* Sargent in Ontario Nat. Sci. Bull. No. 4, 51 (1908).

The late ripening fruit first called my attention to this tree and led me to describe it as a species. This character, however, has little morphological value. It differs, too, from *C. Holmesiana* Ashe in its darker green leaves rougher on the upper surface, larger flowers on often villose pedicels, and in the shorter pedicels of the more constantly obovoid fruit. In size, habit, and in the bark of the trunk and branchlets this tree does not differ from *C. Holmesiana* with which it grows in Ontario, the Province of Quebec and in central and western New York, and can best perhaps be considered a variety of that species.

Crataegus pedicellata var. **gloriosa,** n. var. — *Crataegus gloriosa* Sargent in Rep. N.Y. State Mus. 122, 79 (1908).

The rather larger flowers with pink, not deep rose-colored anthers, the somewhat larger more lustrous fruit usually mamillate at base, and ripening a few days earlier, the convex leaves and the somewhat paler bark of the trunk, led me at one time to consider this tree specifically distinct from *C. pedicellata* Sargent. Having seen more of the trees growing near Rochester, New York, which is the only place where *C. gloriosa* has been found, I now believe that it is best considered a variety of *C. pedicellata* which is common in the same region.

NEW SPECIES, VARIETIES AND COMBINATIONS FROM THE HERBARIUM AND THE COLLECTIONS OF THE ARNOLD ARBORETUM [1]

ALFRED REHDER

SAXIFRAGACEAE (*continued*)

Ribes L.

Ribes vulgare Lam. f. **variegatum,** comb. nov. — *Ribes rubrum* 3. *variegatum* Weston, Bot. Univ. I. 244 (1770). — *Ribes rubrum var.* Schmidt, Oester. Baumz. II. 44, t. 93 (leaf) (1794). — *R. rubrum* 6, *foliis luteo-variegatis* Du Hamel apud Loudon, Arb. Brit. II. 977 (1838). — *R. rubrum* 3, *foliis aureo-marginatis* Hort. apud Kirchner in Petzold & Kirchner, Arb. Musc. 414 (1864). — *R. rubrum aureo-marginatum* hort. apud Schelle in Beissner, Schelle & Zabel, Handb. Laubholz-Ben. 143 (1903).

Of the common currant Miller in his Catalogus plantarum, pp. 64, 65 (1730) enumerates 3 different variegated forms: 1. Ribes; vulgaris, foliis ex luteo variegatis — 2. Ribes; vulgaris, foliis ex albo variegatis. — 3. Ribes; fructu albo, foliis ex albo variegatis. The leaf figured by Schmidt is

[1] Continued from p. 210.

broadly and irregularly margined with yellowish white and represents probably the most common form. Weston does not mention the color, he simply calls his form "striped-leaved Currant-tree."

R. vulgare f. **striatum,** comb. nov. — *R. rubrum γ. baccis variegatis* Wallroth, Sched. Crit. 107 (1822). — *R. rubrum β. variegatum* Berlandier in De Candolle, Prodr. III. 481 (1828), non Weston. — *R. rubrum* 1d. *striatum* Kuntze, Taschen-Fl. Leipzig, 236 (1867).

This form has fruits striped red and yellow.

× **Ribes holosericeum** Otto & Dietr. var. **pallidum,** var. nov. — *R. pallidum* Otto & Dietrich in Allgem. Gartenzeit. x. 268 (1842). — Hedlund in Bot. Not. 1901, 102. — Janczewski in Bull. Acad. Sci. Cracovie, 1901, 298; l. c. 1904, 24; Mém. Soc. Phys. Hist. Nat. Genève, XXXV. 480, f. 183 (Monog. Gros.) (1907). — *R. ciliatum* Kitaibel apud Kanitz in Linnaea, XXXII. 480 (1863). — *R. Kitaibelii* Doerfler, Herb. Norm. No. 4264 (1902).

According to Janczewski *R. holosericeum* is a hybrid between *R. rubrum* L. and *R. petraeum* Wulf. var. *caucasicum* (=var. *Biebersteinii* Schneid.), while *R. pallidum* is a hybrid between *R. rubrum* and *R. petraeum* var. *bullatum* Jancz. Both hybrids have therefore the same species as parents, and must be classed under one binominal. As *R. holosericeum* precedes the other hybrid in the original publication, it may stand as the main name.

Ribes odoratum Wendl. var. **serotinum,** comb. nov. — *R. flavum* Colla in Mem. Accad. Torino, XXXIII. 114, t. 1B (Hort. Ripul. apx. III.) (1828), non Berlandier. — *R. fragrans* Loddiges, Bot. Cab. XVI. t. 1533 (1829), non Pallas. — *R. aureum β. serotinum* Lindley in Trans. Hort. Soc. VII. 242 (1830). — *R. aureum γ. sanguineum* Lindley, l. c. — *R. intermedium* Janczewski in Bull. Acad. Sci. Nat. Cracovie, 1910, 86, vix *Chrysobotrya intermedia* Spach. — *R. aureum* var. *intermedium* Janczewski, l. c. 91, fig. 2 (1910). — *R. aureum acerifolium* Hort. Spaeth ex Janczewski, l. c., pro syn.

This variety differs chiefly in its spreading, not reflexed or revolute sepals, narrower, less red petals and globular purple-brown fruit. Coville & Britton (in N. Am. Fl. XXII. 204 [1908]) place *Chrysobotrya intermedia* Spach under typical *R. aureum* which seems correct according to the original description and figure, while Janczewski places it under his *R. aureum grandiflorum* which is identical with *R. odoratum* Wendland.

Ribes Ruizii, nom. nov. — *R. glandulosum* Ruiz & Pavon, Fl. Peruv. III. 13, t. 233B (1802), non Grauer, 1784. — Berlandier in Mém. Soc. Phys. Sci. Hist. Nat. Genève, III. pt. 2, 59, t. 2, fig. 20 (1826); in De Candolle Prodr. III. 481 (1828). — Gay, Fl. Chil. III. 33 (1847). — Philippi in Linnaea XXVIII. 647 (1856). — Reiche, Fl. Chil. III. 42 (1902). — Janczewski in Mém. Soc. Phys. Hist. Nat. Genève, XXXV. 430, fig. 144 (1907).

CHILE, BOLIVIA, ARGENTINE.

Ruiz & Pavon's name *R. glandulosum* is preoccupied by the valid *R. glandulosum* Grauer (1784), the oldest name for the species generally known as *R. prostratum* L'Héritier (1785).

HAMAMELIDACEAE

Parrotiopsis Jacquemontiana, comb. nov. — *Fothergilla involucrata* Falconer in Proc. Linn. Soc. I. 18 (1839), sine descriptione, in Royle, Ill. Bot. Himal. introd. XXV. (1839), sine descriptione. — Niedenzu in Engler & Prantl. Nat. Pflanzenfam. III. 2A, 126 (1891). — *Parrotia Jacquemontiana* Decaisne in Jacquemont, Voy. VI. 73, t. 82 (1844). — Brandis, For. Fl. 216, t. 28 (1874). — Clarke in Hooker f., Fl. Brit. Ind II. 426 (1879). — Hooker f. in Bot. Mag. CXXII. t. 7501 (1896). — *Parrotiopsis involucrata* Schneider, Ill. Handb. Laubholzk. I. 429, fig. 274h–l, 275b (1905). — Baas Becking in Mededeel. Landbouwhoogesch. Wageningen, XIV. 104, t. 3 (1918).

Parrotiopsis first proposed as a subgenus of *Fothergilla* by Niedenzu in 1891 (l. c.) is probably best regarded with Schneider as a distinct genus, as it differs in its floral character as well from Fothergilla as from Parrotia, though it is apparently nearer to the former from which it differs only in the capitate inflorescence supported at the base by large bracts, in the less numerous stamens with linear not club-shaped filaments, while from Parrotia it is distinguished by the upright more numerous stamens with subquadrangular yellow anthers opening laterally by two longitudinal valves and by the stellate pubescence. The specific name, however, accepted by Schneider cannot stand, as the name *F. involucrata* is in neither one of the two places cited above accompanied by a description.

Hamamelis vernalis Sargent f. **tomentella**, forma nov.

A typo recedit foliis subtus praesertim ad nervos dense tomentellis vel subtomentosis, pilis fasciculatis e pilis villosis 0.5–1 mm. longis compositis.

OKLAHOMA. Le Flore County: Poteau, July 12, *E. J. Palmer* (No. 8260, type), near Page, September 9, 1913, *G. W. Stevens* (No. 2640).

MISSOURI. Monteer, October 25, 1908, *B. F. Bush* (No. 5344).

The same form has appeared among plants introduced from Swan, Missouri, and is growing now at the Arboretum. Like the type this form varies in the color of the under side of the leaves from green to glaucous.

ROSACEAE

Physocarpus australis, comb. nov. — ? *Spiraea caroliniana* Marshall, Arbust. 146 (1785), nomen. — *Opulaster australis* Rydberg in N. Am. Fl. XXII. 242 (1908).

Virginia to South Carolina.

This species seems to be well distinguished from *P. opulifolius* Maximowicz by the stellate-tomentose receptacle and sepals, by the shorter, abruptly pointed follicles and the smaller and broader leaves.

Physocarpus stellatus, comb. nov. — *Spiraea opulifolia* E. *ferruginea* Nuttall apud Torrey & Gray, Fl. N. Am. I. 414 (1840). — *Neillia opulifolia* var. *ferruginea* S. Watson, Bibl. Ind. I. 290 (1878). — *Opulaster stellatus* Rydberg in Small, Fl. Southeast. St. 513 (1903); in N. Am. Fl.

XXII. 243 (1908). — *Physocarpus ferrugineus* Daniels in Univ. Missouri Stud. Sci. I. 291 (1907). — *Opulaster alabamensis* Rydberg in N. Am. Fl. XXII. 243 (1908).

Georgia to Florida and Alabama.

This species is well distinguished from *P. opulifolius* by the stellate-pubescent carpels and the stellate pubescence of the young branchlets and of the under side of the leaves, but I am unable to separate from it specifically *Opulaster alabamensis* Rydberg. Specimens of that species from the type locality differ only in the generally narrower and more pointed leaves, those of the shoots often acuminate, those of the flowering branchlets usually acute; the flowers are somewhat larger and the follicles number usually five. On the plants growing in this Arboretum which were raised from seed collected in 1906 at the type station of *O. alabamensis*, the bracts of the inflorescence are leafy, narrowly elliptic to oblong-lanceolate, entire or with few coarse teeth, pubescent and 4–8 mm. long and mostly persistent until autumn, while on wild specimens the bracts are small and caducous.

Neillia longeracemosa Hemsl. var. **lobata,** var. nov.

A typo differt foliis minoribus 2.5–4.5 cm. longis manifeste 3-lobatis et apicem versus inciso-lobulatis et grossius serratis, subtus costa media basin versus pubescente excepta glabris, stipulis saepe pauci-denticulatis.

CHINA. Szechuan austr.: "inter Oti et Jenyan Hsien prope Quentui in dumetis" alt. 2900 m., June 4, 1914, *C. Schneider* (No. 3558).

This form appears at the first glance very distinct from other species of the genus Neillia on account of the small deeply lobed leaves, the sinuses of the basal lobes reaching about halfway to the middle, but the flowers agree exactly with those of *N. longeracemosa*, while the leaves and the stipules resemble closely those of *Stephanandra incisa* Zabel.

Neillia sparsiflora, sp. nov.

Frutex ramis gracilibus teretibus pallide rubro-brunneis; ramuli juniores setoso-glandulosi ceterum glabri; gemmae fuscae, glabrae: folia ovata, caudato-acuminata, basi rotundata vel leviter subcordata, argute et partim dupliciter serrata, basi lobis brevibus instructa, sursum lobulata, 4–6.5 cm. longa et 3–4.2 cm. lata, supra laete viridia, glabra, subtus pallidiora et ad costam et venas sparsissime pilosa et stipitato-glandulosa; petioli graciles, 0.8–1.2 cm. longi, sparse stipitato-glandulosi et supra pubescentes; stipulae ovato-lanceolatae, petiolum dimidium vix aequantes, sparse serratae: inflorescentia circiter 4-flora, pedunculo incluso circiter 3.5 cm. longa, rhachi gracili flexuosa, ut pedunculus et pedicelli 3–4 mm. longi setoso-glandulosa; bracteae late lanceolatae, margine sparse setoso-glandulosae, pedicellos subaequantes vel paulo longiores; receptaculum campanulatum vel cylindrico-campanulatum, 6–7 mm. longum et 4–5 mm. crassum, extus glabrum, intus circa medium pilis sparsis annulum formantibus instructum; sepala ovata-lanceolata, acuminata, intus dense, extus versus apicem sparse villosula, 4 mm. longa; petala ovalia, 5 mm. longa, apice

eroso-denticulata et sparse ciliolata; stamina 20, longiora petalis circiter triente breviora, antheris ochraceis; ovarium ellipsoideum, supra medium dense villosum; stylus basi villosus, staminibus longioribus paulo brevior; ovula circiter 9: fructus non visus.

Proxima videteur *N. sinensi* Oliver, sed ramulis et petiolis rachique setoso-glandulosis, petiolis longioribus, racemo paucifloro, receptaculo campanulato facile distinguitur.

CHINA. Yunnan: Kou-ty, circa prope Pe-yen-tsin, 1917, *Siméon Ten* (No. 462).

This species differs from all Neillias known to me in the setose glandular branchlets, petioles and inflorescence. With *N. sinensis* Oliver and *N. ribesioides* Rehder it agrees in the glabrous receptacle, but both species differ in their many-flowered racemes, cylindric receptacle and in the ovary being pubescent only at the apex; the former species differs further in the short petioles about 5 mm. long, and *N. ribesioides* in the short, ovate, acutish and mucronulate sepals and in the pubescent under side of the leaves.

Spiraea prunifolia Sieb. & Zucc. var. **hupehensis** comb. nov. — *S. hypericifolia* var. *hupehensis* Rehder in Sargent, Pl. Wilson. 1. 439 (1913).

A reëxamination of Wilson's No. 1754 and No. 2754 have convinced me that these specimens do not belong to *S. hypericifolia* from which they differ considerably in their short stamens which are only about one third as long as the petals, while in *S. hypericifolia* they are about as long as the petals. Furthermore the leaves are elliptic-oblong and bright green and do not show the tendency toward the obovate shape and the grayish color characteristic of *S. hypericifolia*. From typical *S. prunifolia* the variety differs chiefly in the glabrousness of the leaves and in the serration which is reduced to 1–4 teeth on each side near the apex.

The true *S. hypericifolia* occurs in northern China, being represented in our collection by a specimen collected May, 1910, near Yenan Fu, Shensi, by *Wm. Purdom* (No. 346).

Spiraea Martinii Léveillé in Fedde, Rep. Spec. Nov. IX. 321 (1911). — *S. fulvescens* Rehder in Sargent, Pl. Wilson. 1. 439 (1913), non Dippel (1893).

CHINA. Yunnan: Mengtze, barren dry hills, alt. 5000 ft., *A. Henry* (No. 10662); Pe-yen-tsin, in collibus Ta-song-pin, April 4, 1916, *Siméon Ten* (No. 39, frutex 1.5 m. altus); Yunnan-Fu, in vallibus dumosis, alt. 2000 m., April 29, 1916, *O. Schoch* (No. 54).

The study of additional material has convinced me that my *S. fulvescens* is not specifically different from *S. Martini* Léveillé of which, however, I have not seen the type. This is in so far fortunate, as the name *S. fulvescens* Rehder could not have been retained on account of the older homonym *S. fulvescens* Dippel which is a hybrid of the Spiraria-group. Siméon Ten's specimen differs from the original description in the more pubescent leaves and in their grayish green, not glaucous under side, while Schoch's No. 54 differs in the smaller, not 3-lobed leaves and in the less pubescent

branchlets; none of these specimens shows the peculiar fulvescent spurs of Henry's No. 10662.

Spiraea Schochiana, sp. nov.

Frutex ut videtur erectus ramis arcuatis; ramuli juniores dense fulvo-villosi, annotini prominenter striati et angulati; gemmae ovoideae, acutiusculae, perulis imbricatis pubescentibus obtectae: folia elliptica vel obovato-elliptica, acutiuscula vel obtusiuscula et mucronata, basi late cuneata, circiter 1.5 cm. longa, utrinque dentibus 1–5 mucronulatis instructa, supra opace viridia, sparse lanuginosa, subtus tomento lanuginoso-villoso initio fulvescente demum cinerascente et epidermate glaucescente papillosa obtecta, utrinscecus nervis 3–4 instructa; petioli 1–2 mm. longi, dense villosi: flores albi in corymbo composito multifloro convexo denso 2.5–3.5 cm. diam. ramulos plurifoliatos terminante; pedunculi pedicellique 1–2 mm. longi et receptaculum dense fulvescenti-villosa: sepala triangularia intus extusque villosula; petala suborbicularia, 1.8 mm. lata; stamina 25–30, longiora petalis subaequilonga; discus conspicuus, 10-lobatus; receptaculum intus villosa; carpella apice longe villosa pilis longis partim stylum fere aequantibus, ad ventrem tantum parce pilosa; styli sepalis paulo breviora: carpella matura desiderantur.

China. Yunnan: district of Yunnan Fu, "in silvis versus bor. occ.," alt. 2200 m., March 14, 1916, *O. Schoch* (No. 84).

This species is closely related to *S. Henryi* Hemsley which chiefly differs in the terete branchlets, the less dense pubescence of all parts, the much larger and looser inflorescence, the slenderer pedicels 2–6 mm. long and in the carpels being pubescent on the back. I should have considered this species a variety of *S. Henryi* with a denser pubescence and a smaller, more compact inflorescence, but for its strongly angled shoots, a character of importance in the genus. In its angled branchlets it agrees with *S. canescens* Don, which, however, differs markedly in its winter-buds with only 2 exposed scales, in the smaller, less pubescent, entire or slightly toothed leaves and in the grayish not fulvescent pubescence. In its general appearance the new species has a close resemblance to *S. chinensis* Maximowicz, but the inflorescence of that species is a simple umbel-like raceme.

Spiraea Teniana, sp. nov.

Frutex erectus 1–3-metralis; ramuli hornotini initio minute et laxe puberuli, mox glabri et fusco-rubri, teretes, annotini brunnei; gemmae breves, perulis 2 exterioribus glabris obtectae, interioribus accrescentibus foliaceis margine ciliolata excepta glabris: folia elliptica vel elliptico-ovata, acuta, basi late cuneata, 2–2.8 cm. longa, tertia vel quarta parte inferiore excepta argute subsimpliciter serrata dentibus late ovatis acutis et interdum latere exteriore denticulo unico instructis, supra obscure viridia, glabra, subtus pallida, sed vix glaucescentia, ad costam basin versus sparse accumbenti-pilosa et margne basin versus ciliolata, utrinsecus nervis 4–6 subtus elevatis et venulis leviter elevatis instructa; petioli 1–2 mm. longi, fere glabri: flores hermaphroditi, albi, vix 4 mm. diam. in corymbis com-

positis densis 2–3 cm. diam. et ramulos adscendentes 7–13 cm. longos terminantibus; pedunculi pedicellique et receptaculum accumbenti-pilosula; ramuli 2–3 inferiores bracteam foliaceam supra basin vel circa medium gerentes; sepala triangularai, acutiuscula, mucronulata, 1 mm. longa, glabrescentia; petala suborbicularia, 1.5 mm. longa; stamina valde inaequalia, breviora petala subaequantia, longiora ad 4 mm. longa; discus irregulariter crenulatus; receptaculum intus minute sericeo-pubescens; carpella basi tantum et ad ventrem sparse pilosula; styli sepala paulo superantes: follicula matura desiderantur.

CHINA. Yunnan bor.-occ.: circa Pe-yen-tsin, in silvis Tie-so, Jun. 22, 1916, *Siméon Ten* (No. 165).

This species seems most closely related to *S. vacciniifolia* D. Don which differs chiefly in the densely villous inner bud-scales of the winter-buds, in the slenderer petioles, in the entire or crenately serrate leaves and in the larger and looser densely villous inflorescence. It also resembles *S. bella* Sims, but that species is at once distinguished by its dioecious flowers.

Spiraea virginiana Britt. var. **serrulata,** var. nov.

A typo recedit foliis majoribus et latioribus elliptico-oblongis 4–7 cm. longis et 1.5–3 cm. latis plerisque supra medium serrulatis, rarius versus apicem tantum pauci-serrulatis, corymbis 5–13 cm. latis.

NORTH CAROLINA. Macon County: Franklin, on river bank, July 2, 1919, *T. G. Harbison* (No. 208, type; shrub 2 m. tall); banks of Little Tennessee River, same date and same collector (No. 209; a straggling much-branched shrub with flowering wands 1.25 m. long).

This new variety on account of its larger and broader leaves serrulate above the middle and of the large inflorescence looks quite distinct from typical *S. virginiana*, but in all other characters it agrees with the type. A specimen from Buncombe County collected by T. G. Harbison on the same date is intermediate between the type and the variety.

Holodiscus franciscanus, comb. nov. — *Sericotheca franciscana* Rydberg in N. Am. Fl. XXII. 268 (1908).

This species is certainly very closely related to *H. discolor* Maximowicz and may possibly be a variety of that species, but the firmer texture of the usually narrower leaves, less deeply toothed and more often with simple teeth and the short, triangular-ovate and acute sepals serve to distinguish it from *H. discolor*.

The numerous species described are often difficult to distinguish on account of the occurrence of intermediate forms; of those I have seen I am unable to separate specifically *Sericotheca obovata* Rydberg from *H. glabrescens* (Greene) Heller, and *Sericotheca concolor* Rydberg from *H. microphylla* Rydberg.

Pyracantha discolor, sp. nov.

Frutex 1.5–3 m. altus; ramuli juniores fulvo-tomentosi, annotini et vetustiores glabri et fusco-purpurei-lucidi, interdum in spinas circa 1 cm. longas mutati: folia ovalia vel elliptica vel oblonga, obtusa, rarius acuta vel emar-

ginata, pleraque mucronulata, basi cuneata vel late cuneata, vel interdum fere rotundata, 2–6 cm. longa, integra vel rarius minute crenato-serrulata, supra laete viridia, subtus pallida vel glaucescentia, nervis fere obsoletis, initio praecipue subtus ad costam mediam villosa, mox glabra; petioli 3–8 mm. longi, initio pubescentes, demum glabri vel fere glabri; corymbi multiflori, 3–4 cm. diam.; pedicelli glabri, graciles, 0.3–1 cm. longi; flores albi, circiter 8 mm. diam.; receptaculum glabrum; sepala semiorbicularia vel ovata, apiculata, sparse pubescentia, erecta; petala rotundato-obovata; stamina fere 20, petalis breviora, antheris flavidis; discus lanatus; carpella 5, apice villosa: fructus tantum immaturi visi.

China. Hupeh: Fang Hsien, side of streams, alt. 300 m., June, 1907, *E. H. Wilson* (Arnold Arb. Exp. No. 2986, type); same locality, July, 1910, *E. H. Wilson* (Veitch Exp. No. 349, quoad unum specimen florens, altero spec. florente et spec. fructifero exclusis); north and south of Ichang, alt. 300–1300 m., May 26, 1907, *E. H. Wilson* (Arnold Arb. Exp. No. 662, specimine fruct. excluso). Kwei-chou: "inter oppida Tuyän et Patschai prope vicum Dodjie, in silva xerophila collis," alt. 700 m., Jul. 13, 1917, *H. Handel-Mazzetti;* "prope urbem Kutschou, in silvis frondosis templi Yanggu-miau," alt. 300 m., July 20, 1917, *H. Handel-Mazzetti;* "in silva frondosa collis Nanyo-schan pr. urb. Kweiyang," alt. 1200 m., July 4, 1917, *H. Handel-Mazzetti.*

This new species is well characterized by its glabrous, entire or nearly entire leaves, pale or glaucescent and indistinctly veined beneath. It is most closely related to *P. Gibbsii* A. B. Jackson which differs in its obovate to obovate-oblong or spatulate leaves, gradually narrowed toward the base, coarsely crenate, light green beneath and with distinct secondary veins and in the quite glabrous sepals. In the entire or nearly entire leaves and in their oblong shape it resembles *C. angustifolia* Schneider, but that species differs in the tomentose pubescence of the under side of the much narrower leaves and of the denser and few-flowered inflorescence. The three specimens from Kwei-chou agree with the type specimens in the size and shape of the leaves, while Wilson's Nos. 349 and 662 have smaller leaves, not more than 3 cm. long and occasionally acutish or acute.

Pyracantha Koidzumii, comb. nov. — *Cotoneaster formosana* Hayata in Jour. Coll. Sci. Tokyo, xxx. art. 1, 101 (Mat. Fl. Formos.) (1911); Icon. Pl. Formos. i. 244 (1911). — Kanehira, Trees Formosa, 213, fig. (1917); ed. 2, 213, fig. (1918). — *Cotoneaster Koizumii* Hayata in Jour. Coll. Sci. Tokyo, xxx. art. 1, 101 (Mat. Fl. Formosa) (1911); Icon. Fl. Formos. i. 244 (1911). — Kanehira, Trees Formosa, 213 (1917). — *Cotoneaster Koidzumii* Koidzumi in Jour. Coll. Sci. Tokyo, xxxiv. art. 2, 35 (1913), includ. syn. *C. formosana.* — *Cotoneaster taitoensis* Hayata in Jour. Coll. Sci. Tokyo, xxx. art. 1, 102 (Mat. Fl. Formosa) (1911); Icon. Pl. Formos. 245 (1911). — Koidzumi in Jour. Coll. Sci. Tokyo, xxxiv. art. 2, 36 (1913). — Kanehira, Trees Formosa, 214 (1917). — *Pyracantha formosana* Kanehira, Trees Formosa, ed. 2, 213 (1918), pro synon.

FORMOSA. East Coast: Pinan to Dakusui, between Pinan and Karenko, abundant in stony areas of river mouth, Nov. 18, 1918, *E. H. Wilson* (No. 1128); Pinan and Taito (ex Hayata).

The three species described by Hayata differ only by slight and partly accidental individual differences and Mr. Wilson who has seen the type specimens in Toyko says that they undoubtedly belong to the same species. Kanehira in the second edition of his Trees of Formosa (which does not differ from the first except in a few nomenclatorial changes) had inserted after *C. formosana*, acting on the suggestion of Mr. Wilson that the species belongs to Pyracantha, in parenthesis the name *Pyracantha formosana*, but as five years earlier Koidzumi had already united *C. formosana* and *C. Koizumii* under the name *C. Koidzumii*, and as his choice cannot be modified according to art. 46 of the International rules, though *C. formosa* has precedence on the page, the specific name "Koidzumii" is the correct name if the two species are united. Moreover, *Pyracantha formosana* Kanehira is not a valid publication, being cited only as a synonym.

Crataegomespilus Dardari Simon-Louis var. **Asnieresii**, comb. nov. — *Crataego-Mespilus* "Jules d'Asnières" Simon-Louis apud Jouin in Jardin, 1899, 22. — *Crataegus Oxyacantha* × *Mespilus germanica* 2. *Asnieresi* Koehne in Gartenfl. L. 632 (1901). — *Crataego-Mespilus Dardari crataegoides* Zabel in Beissner, Schelle & Zabel, Handb. Laubholz-Ben. 180 (1903). — *Crataegomespilus Asnieresii* Schneider, Ill. Handb. Laubh. I. 765, fig. 433G–H, 434A–C (1906). — Bean in Kew Bull. Misc. Inform. 1911, 268, fig. 2. — Beck in Reichenbach, Icon. Fl. Germ. XXV. 31, t. 109 (1914?). — Berger in Gartenwelt, XX 481, fig. 1a–d (1916). — *Mespilus germanica* × *monogyna* B. *Asnieresi* Ascherson & Graebner, Syn. Mitteleur. Fl. VI. 2. 46 (1906).

As *C. Asnieresii* Schneider is of the same parentage as *C. Dardari* and even originated on the same tree, it must be treated as a variety of the older *C. Dardari*.

× **Crataegomespilus Gillotii**, comb. nov. — *Crataegus oxyacantho-germanica* Gillot in Bull. Soc. Bot. France, XXII. XIV (1876), excl. synon.; in Bull Herb. Boiss. II. apx. IV. 18 (1894), pro parte. — *Cratae-Mespilus Gillotii* G. Beck in Reichenbach, Icon. Fl. Germ. XXV. 30, t. 107 (1914).

Beck placed this plant, apparently a hybrid between *Mespilus germanica* and *Crataegus monogyna* under Cratae-Mespilus, a name proposed by Camus in 1899 (in Jour. de Bot. XIII. 326) for the hybrid between *Mepilus germanica* and *Crataegus Oxyacantha* first described as *Mespilus grandiflora* Smith, but a year earlier Jouin had proposed (in Compt. Rend. Congr. Hort. Paris, 9) the name Crataego-Mespilus for graft hybrids between *Mespilus germanica* and *Crataegus monogyna*. As both generic names are intended for intermediate forms between the same genera, they should be considered synonymous and the oldest name adopted as valid. It seems, however, advisable to keep sexual hybrids and graft hybrids between the same species distinct under different specific names, and to retain in this case for the sexual hybrids between *Crataegus monogyna* and *Mespilus*

germanica the name *C. Gillotii*, while *C. Dardari* is restricted to the graft hybrids between the same species.

Crataegus monogyna f. **biflora,** comb. nov. — *C. Oxyacantha* 7. *biflora* Weston, Bot. Univ. I. 79 (1770). — *Mespilus Oxyacantha praecox* Dumont de Courset, Bot. Cult. ed. 2, v. 453 (1811). — *Crataegus Oxyacantha* 25. *praecox* Hort. apud Loudon, Arb. Brit. II. 833 (1838). — *C. monogyna* var. *praecox* Henry in Elwes & Henry, Trees Gr. Brit. Irel. VII. 1736 (1913), non Dippel (1892).

Though Weston's description of this form may be considered insufficient, for his designation of the form as " biflora " can mean either two-flowered or twice flowering, the citation of the vernacular name " Glastonbury Thorn " should be sufficient for identification. Moreover, the name " praecox " under *Crataegus monogyna* is preoccupied by *C. monogyna* var. *praecox* Dippel (1892) which is not based on any previously published name and according to the description is entirely different from the Glastonbury Thorn and apparently not a form of *C. monogyna*.

Crataegus pentagyna Waldst. & Kit. var. **Oliveriana,** comb. nov. — *Mespilus Oliveriana* Dumont de Courset, Bot. Cult., ed. 2, v. 454 (1811). — *Crataegus Oliviriana* (*sic*) Bosc in Nouv. Cours Agric. ed. 2, II. 222 (1821). — *C. Oliveriana* Bean, Trees & Shrubs Brit. Isl. I. 431 (1914). — *C. Oxyacantha* var. *Oliveriana* Lindley in Bot. Reg. XXIII. t. 1933 (1837). — Loudon, Arb. Brit. II. 831, fig. 606 (1838).

This is apparently only a variety of the variable *C. pentagyna* Waldstein & Kitaibel and differs from it chiefly in the more pubescent and more finely toothed leaves, in the entire or less toothed stipules and in the smaller fruit. In the first description by Dumont de Courset the leaves are described as somewhat pubescent with the lobes having nearly constantly three teeth at the apex. Bosc himself in 1821 describes the leaves as very pubescent with 5 acute lobes on each side. Though Poiret states that he received his specimens from Bosc himself, his *Mespilus Oliveriana* (Encyl. Méth. IV. 72 [1816]) must be an entirely different plant, for he describes it as "glaberrima, lobis obtusis subintegris "; De Candolle (Prodr. II. 630 [1825]) follows Poiret's description. Koch (Dendr. I. 156 [1869]) considers it a form of *M. melanocarpa* M. Bieb., while Dippel, Koehne and Schneider consider it a synonym of *C. pentagyna*.

Sorbus Harrowiana, comb. nov. — *Pyrus* (*Sorbus*) *Harrowianus* Balfour f. & W. W. Smith in Not. Bot. Gard. Edinb. x. 61 (1917).

CHINA. Yunnan.

This species is remarkable for its very large leaves; the larger leaflets of the 5–7-foliolate leaves are often more than 20 cm. long.

Sorbus hybrida L. f. **fastigiata,** comb. nov. — *Pyrus pinnatifida fastigiata* Bean in Gard. Chron. ser. 3, XLI. 184, fig. 82 (1907).

A form with strictly upright branches forming a fastigiate tree.

(*To be continued*)